UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/807,783	06/01/2001	Jingye Liu	CCP-100	4651

7590 10/01/2002

Saliwanchik Lloyd & Saliwanchik
Suite A1
2421 NW 41st Street
Gainesville, FL 32606

EXAMINER	
FOLEY, SHANON A	
ART UNIT	PAPER NUMBER
1648	

DATE MAILED: 10/01/2002 9

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/807,783	Applicant(s) LIU ET AL.	
	Examin r Shanon Foley	Art Unit 1648	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondenc address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 June 2001* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,7,9 and 10* is/are rejected.

7)☒ Claim(s) *5, 6, 8* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Objections

Claim 1 is objected to because of the following informalities: the last "a" of line 1 should be omitted.

Claim 6 is objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from any other multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claim has not been further treated on the merits.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 3 and 5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 3 is confusing because it cannot be determined which ingredients are necessary in the formulation and which are optional. For example, is trehalose, ascorbic acid, or urea required? This rejection affects dependent claims 5 and 6.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1 and 2 are is rejected under 35 U.S.C. 103(a) as being unpatentable over Chiba-ken et al. (JP 1279843 abstract provided with IDS in paper no. 5).

The claim is drawn to a formulation comprising prophylactically effective titers of hepatitis A virus (HAV) and a stabilizer.

Chiba-ken et al. teaches a vaccine comprising inactivated HAV and a stabilizing agent comprising an amino acid, various sugars, and a gelatinizing agent. Chiba-ken et al. does not teach the formulation comprising live HAV. However, one of ordinary skill in the art at the time the invention was made would have been motivated to incorporate a live HAV in to the formulation of Chiba-ken et al. to administer a replication-competent virus to expose the immune system to all of the expression products to the immune system as the virus replicates. One of ordinary skill in the art at the time the invention was made would have had a reasonable expectation for producing the claimed invention because the formulation of Chiba-ken et al. comprises all of the components necessary to stabilize virus particles, live or inactivated, for long periods of time. Therefore, the invention as a whole would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made, absent unexpected results to the contrary.

Claims 1, 2, and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burke et al. (US 6,210,683).

Burke et al. teaches a formulation for a live virus stabilizer comprising human serum albumin that protects against heat inactivation, see column 3, lines 11-46 and claim 15. Although Burke et al. does not explicitly teach incorporating hepatitis A virus LAI strain into the formulation, Burke et al. teaches that the formulation is suitable for live hepatitis virus, see

column 8, lines 38-53. Therefore, it would have been prima facie obvious for one of ordinary skill in the art at the time the invention was made to incorporate the live, effective hepatitis A LAI vaccine, admitted as well known in the instant disclosure on page 2, into the vaccine stabilizing solution of Burke et al. Therefore, the invention as a whole would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made, absent unexpected results to the contrary.

Claims 3, 7, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burke et al. as applied to claims 1 and 2 above, and further in view of Francon et al. (US 507,5110), Volkin et al. (US 6,290,967) and Jansen et al. (US 5,588,516).

Claim 3 is drawn to a stabilized hepatitis live A vaccine formulation comprising (presumably, see the 112, second paragraph rejection above) human serum albumin, trahalose, at least one amino acid, ascorbic acid, sorbitol, and inositol. Claims 7, 9, and 10 are drawn to a stabilizer for a lyophilized live vaccine comprising an enterovirus, paramyxovirus, arbovirus, or herpesvirus comprising human serum albumin, gelatin, trehalose, at least one amino acid, ascorbic acid, urea, sorbitol, and inositol.

Burke et al. teaches a stabilizer for a live virus comprising recombinant human serum albumin, trehalose, sodium glutamate, sorbitol, glutamic acid alkali metal salt, see the previous citations, column 7, line 60, the first table of column 9, and the claims. Burke et al. does not teach combining gelatin and human serum albumin, inositol, ascorbic acid, or urea into the vaccine stabilizing compoisiton.

However, Volkin et al. teaches vaccine stabilizing formulations that comprises human serum albumin and gelatin, and ascorbic acid, see the paragraph bridging columns 6-7, example 1 in column 10, and the claims.

One of ordinary skill in the art at the time the invention was made would have been motivated to add gelatin and ascorbic acid to the formulation of Burke et al. to increase the stability and thermostability of the formulation a see column 2, lines 61-67 and column 3, lines 45-65 of Volkin et al. One of ordinary skill in the art at the time the invention was made would have had a reasonable expectation for producing the claimed invention because gelatin and human serum albumin are conventional stabilizers against inactivation and protect against the physical collapse of vaccines during lyophilization, see column 3, lines 29-32.

Volkin et al. also does not teach the incorporation of urea into the vaccine formulation.

However, Francon et al. teaches stabilizers for vaccines comprising urea, see claims 1 and 2. One of ordinary skill in the art at the time the invention was made would have been motivated to add urea to the formulations of Burke et al. and Volkin et al. because urea is an inexpensive and safe stabilizer ingredient for vaccine formulations, see column 1, lines 36-39. One of ordinary skill in the art at the time the invention was made would have had a reasonable expectation for producing the claimed invention because Francon et al. teaches that the vaccines formulated without urea had a shorter shelf life than those comprising it, see column 3, lines 25-30. None of the references teach incorporating inositol into a vaccine formulation.

However, Jansen et al. does, see line 28 in column 34.

One of ordinary skill in the art at the time the invention was made would have been motivated to incorporate inositol in a vaccine formulation because the compound is

conventionally used as a stabilizer in the art and would be incorporated by routine methods. Therefore, the invention as a whole would have been prima facie obvious to one of ordinary skill in the art, absent unexpected results to the contrary.

Allowable Subject Matter

Claims 5 and 8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art does not teach or suggest a formulation comprising all of the ingredients at the recited concentrations.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Koyama et al. (US 5,948,411) and Fanget et al. (US 6,231,860).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shanon Foley whose telephone number is (703) 308-3983. The examiner can normally be reached on M-F 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Housel can be reached on (703) 308-4027. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-4242 for regular communications and (703) 308-4426 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0196.

Shanon Foley
September 25, 2002

James C. Housel 9/28/02

JAMES HOUSEL
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1600